

Prepared for:



North Florida Transportation Planning Organization 980 North Jefferson Street | Jacksonville, FL 32209 www.northfloridatpo.com

Prepared by:



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Acronyms

Annual Average Daily Traffic **AADT**

ACS American Community Survey

American Association of State Highway **AASHTO**

and Transportation Officials

BB&T Bicycle, Blueways and Trails

COJ City of Jacksonville

EFH Essential Fish Habitat

Florida Department of Environmental **FDEP**

Protection

FFS Florida Forest Service

FGTS Florida Greenways and Trails System

Florida Fish and Wildlife Conservation **FWC**

Commission

Jacksonville Aviation Authority JAA

ROW Right-of-way

State Historic Preservation Officers **SHPO**

St. Johns River Water Management **SJRWMD**

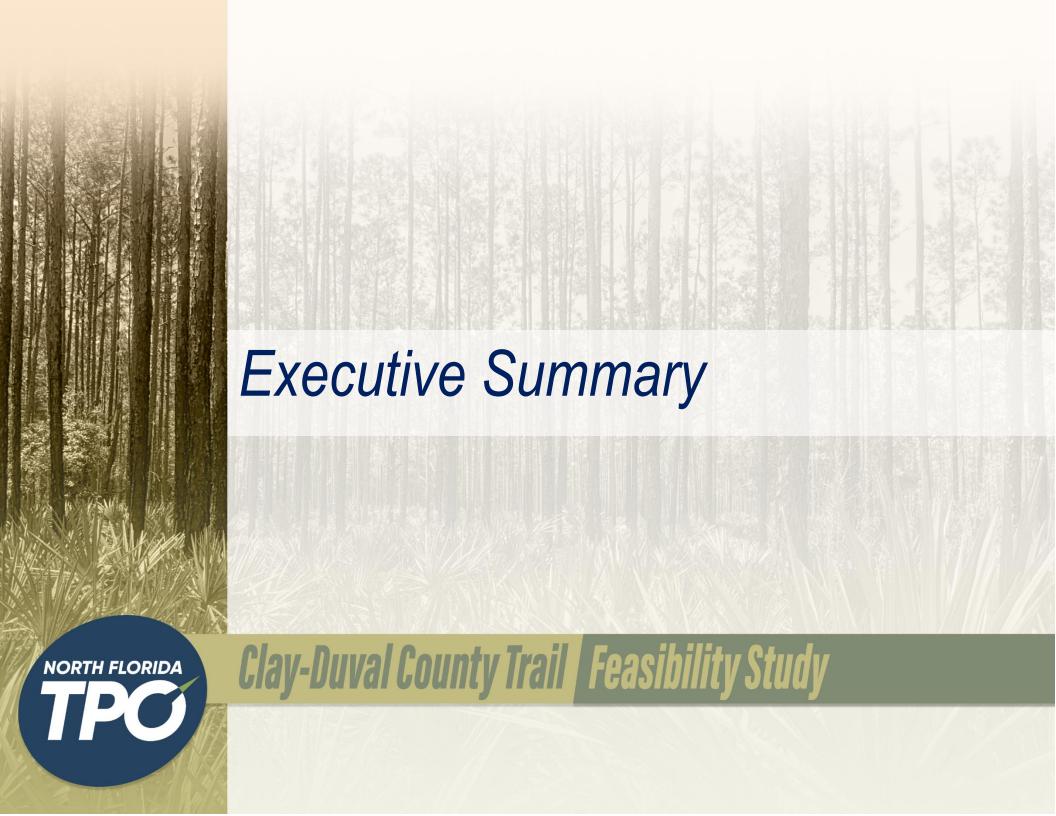
District

SORBA Southern Off-Road Bicycle Association

Shared-Use Nonmotorized Trail **SUN Trail**

TPO Transportation Planning Organization

Unified Planning Work Program UPWP



The Clay-Duval Trail Feasibility Study identified potential alignments and feasible alternatives connecting a trail from Mike Roess Gold Head Branch State Park ("Gold Head") in Clay County to the Cecil Trail in Duval County. This study was included in the North Florida TPO's Unified Planning Work Program (UPWP) in 2021). The final recommended route is provided in **Figure ES-1**.

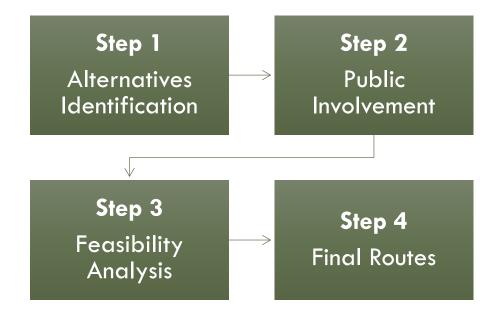
Local Agency Coordination

Introduction

Local agency coordination was a fundamental aspect of this study as the potential routes involved multiple jurisdictions and stakeholders. On the state level, this included the Florida Forest Service (FFS) and the Florida Fish and Wildlife Conservation Commission (FWC). Local municipalities included Clay County, City of Jacksonville (COJ), and City of Green Cove Springs. The Jacksonville Aviation Authority (JAA) was also involved due to the project's proximity to Cecil Airfield. Additionally, the **Southern** Off-Road Bicycle Association (SORBA) and Clay Bicycle, Blueways, and Trails (BB&T) groups were involved as SORBA has a programmed mountain bike trail system through the project area in Jennings State Forest and the BB&T group has been conducting their own grassroots-planning trail efforts through the project area. In addition to local agency coordination throughout the study process, two group meetings were held during on the following dates: December 8, 2021 and February 9, 2022. Minutes from these meetings are included in **Appendix A.**

Study Process

The study process consisted of four primary elements: 1) an Alternatives Identification element that identified the initial alternatives and study area segments; 2) a Public Involvement element featuring an online public survey with over 1,500 participants; 3) a Feasibility Analysis element including an evaluation matrix based on the American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities; and 4) Final Recommended **Routes** which included route maps for the three project segments, planning-level costs, and potential funding opportunities.





Clay-Duval Trail Feasibility Study **Final Recommended Routes**

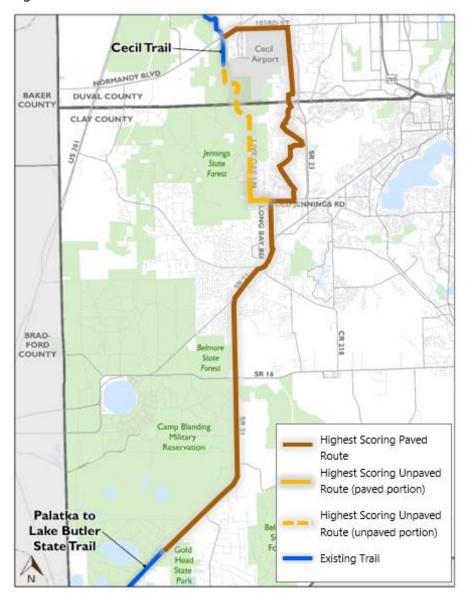
A paved trail connection through Jennings State Forest was one of the primary alternatives investigated during this study. However. it was determined that a paved connection through Jennings State Forest was not a possibility as Florida Forest Service would not permit a paved trail through Jennings State Forest. However, an unpaved connection could potentially be pursued. Therefore, the final recommendations include a paved and unpaved route. It should be noted that an unpaved recreational path has limited potential funding opportunities for bicycle and pedestrian facilities.

The final recommended routes are displayed in Figure ES-1. These routes were developed based on the highest scoring routes from the feasibility analysis which included results from the public survey and input from the local agencies. The total mileage for the paved route is approximately 36.5 miles and the unpaved route is approximately 6.6 miles.

The southern limits of the trail would be at the current terminus of the Palatka-to-Lake Butler State Trail at Gold Head State Park. The trail would then travel along SR 21/Blanding Boulevard to Long Bay Road. The paved connection to the Cecil Trail would then continue east along Old Jennings Road, then north along Tynes Boulevard to Royal Pines Drive and Oakleaf Plantation Parkway. Through Duval County, the trail would continue north along Cecil Connector Road/Perimeter Road (east), then west along 103rd Street to Normandy Boulevard and the Cecil Trail.

Additionally, the unpaved connection would travel west along Old Jennings Road, north along Live Oak Lane to Veterans Park, and would generally weave along the forest perimeter and/or utilize existing trails to Sal Taylor Creek Preserve/Cecil Trail terminus. The portion along Old Jennings Road and Live Oak Lane along Clay County right-of-way may be paved.

Figure ES-1 Final Recommended Routes









1.0 Introduction

1.1 Study Purpose

The purpose of this study was to identify potential alignments and feasible alternatives connecting a trail from Mike Roess Gold Head Branch State Park ("Gold Head") in Clay County to the Cecil Trail in Duval County.

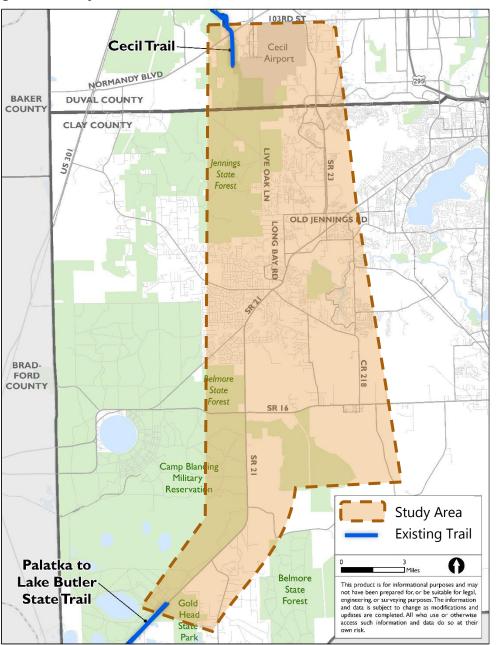
1.2 Study Background

The North Florida Transportation Planning Organization (TPO) completed the North Florida Regional Multi-Use Trail Master Plan in August 2019. This plan identified a regionally endorsed trail network spanning Clay, Duval, Nassau, and St. Johns counties. During the planning process, the Duval County connection to Gold Head State Park was identified as a top priority by Clay County. This led to the Clay-Duval Trail Feasibility Study in the North Florida TPO's Unified Planning Work Program (UPWP) in 2021.

1.3 Study Area

The study area begins at the northern terminus of the Palatka to Lake Butler State Trail at Gold Head State Park in Clay County and ends at the southern terminus of the Cecil Trail in Duval County (see Figure 1-1).

Figure 1-1 Study Area



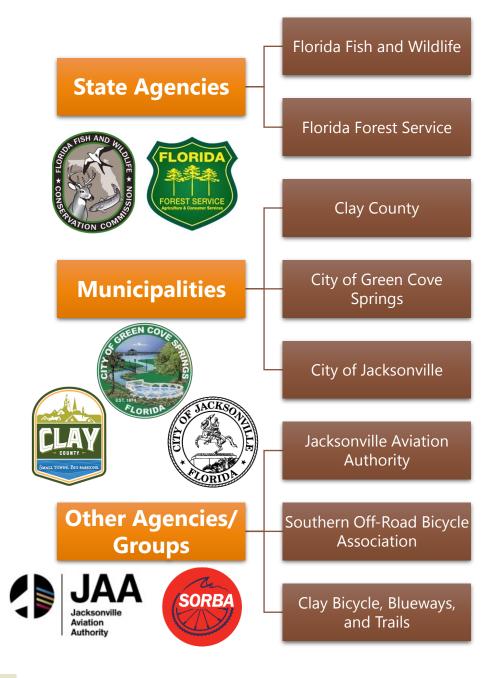


1.4 Local Agency Coordination

Local agency coordination was a fundamental aspect of this study as the potential routes involved multiple jurisdictions and stakeholders. On the state level, this included the Florida Forest Service (FFS) and the Florida Fish and Wildlife Conservation Commission (FWC). Local municipalities included Clay County, City of Jacksonville (COJ), and City of Green Cove Springs. The Jacksonville Aviation Authority (JAA) was also involved due to the project's proximity to Cecil Airfield. Additionally, the **Southern** Off-Road Bicycle Association (SORBA) and Clay Bicycle, Blueways, and Trails (BB&T) groups were involved as SORBA has a programmed mountain bike trail system through the project area in Jennings State Forest and the BB&T group has been conducting their own grassroots-planning trail efforts through the project area.

In addition to general correspondence among the various agencies and representatives throughout the study process, two project coordination meetings were held amongst the group on the following dates and locations:

- Meeting #1, December 8, 2021: Study Kick-Off Meeting held at the Clay County offices.
- Meeting #2, February 9, 2022: Discussed the initial alternatives, upcoming public survey, and the alternatives analysis criteria. Held virtually.





Furthermore, two additional meetings were held with Clay County stakeholders including the County Manager and Assistant County Manager, Parks and Recreation, County Engineering, Planning and Zoning, SORBA, Clay BB&T, and the North Florida TPO. These meetings were held January 20 and January 31, 2022. The purpose of these meetings were to collectively collaborate on the various

Input from these meetings is referenced throughout this report. Meeting minutes are included in **Appendix A.**

challenges of trail alignments and determine an initial set of trail

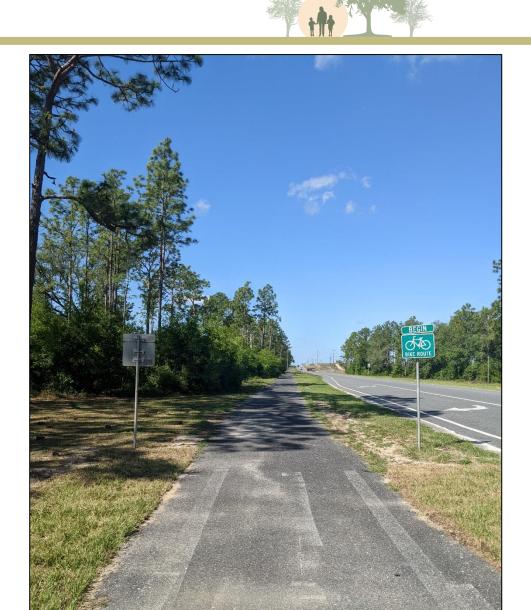
1.5 Document Organization

This document is organized into the following sections:

1.0 Introduction

alternatives.

- 2.0 Alternatives Identification
- 3.0 Public Involvement
- 4.0 Feasibility Analysis
- 5.0 Conclusion



Palatka-to-Lake Butler Trail at Gold Head State Park. Source: Project Team.





2.0 Alternatives Identification

The first step in the study process was to develop the initial alternatives. This was done using the following process:

- 1) Develop Base Trail Route: based on available local, regional, and statewide trail data.
- 2) Segment Study Area: divide the study area into logical segments to develop area-specific alternatives.
- 3) Segment Alternatives: Collaborate with local agencies on potential routing and alternatives for each segment.

Once identified, a feasibility analysis was conducted on the trail alternatives. This analysis is detailed in **Section 4.0** of this report.

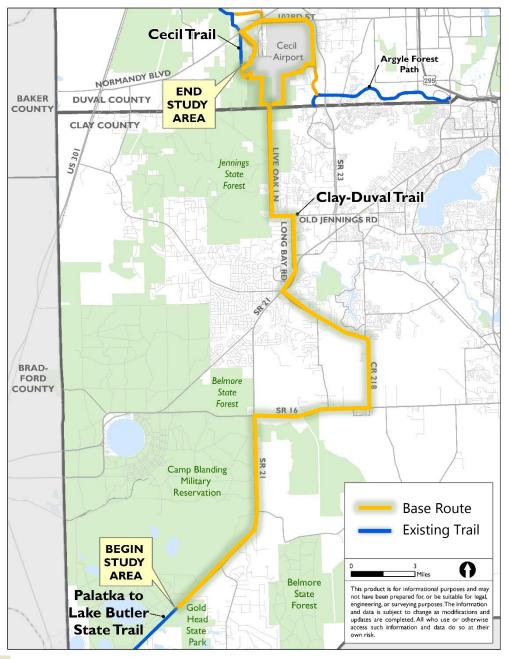
2.1 Base Trail Route

The Base Trail Route was generated to be used as an initial outline for trail routing and alternative development. The Base Trail Route was developed using the following available local, regional, and statewide trail data sources:

- City of Jacksonville Designated Multi-Use Trails (2021)
- City of Jacksonville Future Multi-Use Trails (2021)
- Florida Greenways and Trails System (FGTS) Land Trail Opportunities (2018)
- FGTS Land Trail Priorities (2018)
- North Florida TPO Regional Trail Network (2019)
- Shared-Use Non-Motorized (SUN) Trail Network in Florida (2021)

The Base Trail Route is displayed in Figure 2-1. This route is consistent with the above sources and is the route included in the North Florida TPO Regional Trail Network.

Figure 2-1 Base Trail Route





2.2 Study Segments

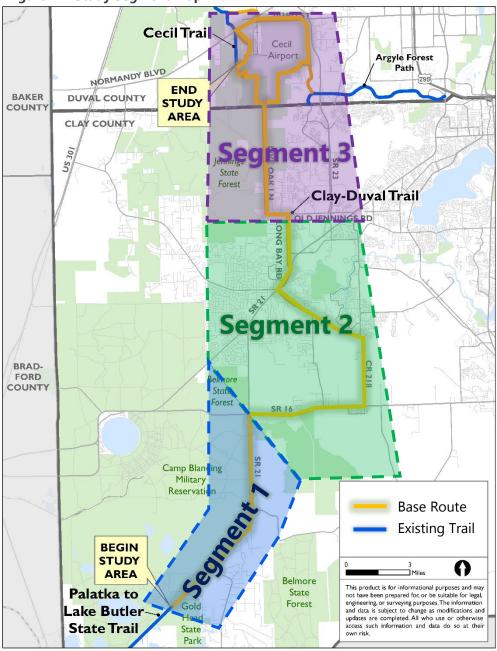
Next, the study area was divided into three geographical segments as shown in **Figure 2-2**. The segments are described as follows:

- Segment 1: Gold Head Branch State Park to SR 16
- Segment 2: SR 16 to Old Jennings Road
- Segment 3: Old Jennings Road to Cecil Trail



Cecil Trail in Duval County (Segment 3). Source: Project Team.

Figure 2-2 Study Segment Map





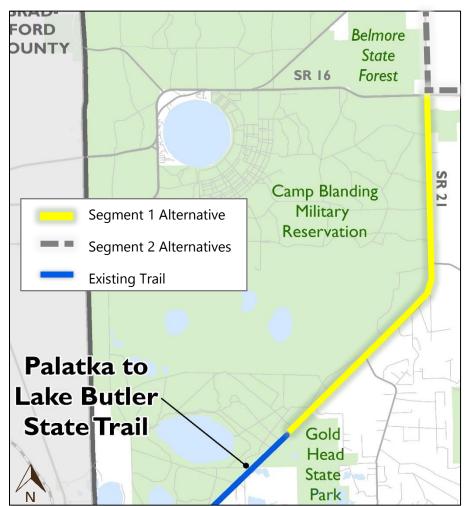


2.3 Study Segment Alternatives

Segment 1

One alternative was developed for Segment 1 due to available logical options. As shown in Figure 2-3, the Segment 1 alternative connects to the northern terminus of the Palatka-to-Lake Butler State Trail and continues north along SR 21 to SR 16.

Figure 2-3 Segment 1 Alternative





SR 21 north of Gold Head State Park. Source: Project Team.



Gold Head entrance and existing trail. Source: Project Team.

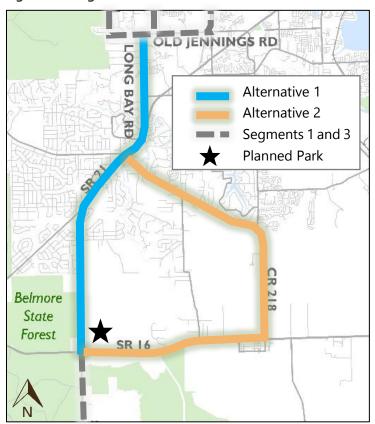


Segment 2

Two alternatives were developed for Segment 2 (see Figure 2-4) to connect the trail between SR 21 and Old Jennings Road. Both alternatives utilize Long Bay Road to connect to Old Jennings Road.

Alternative 1: Alternative 1 continues north along SR 21 (Blanding Boulevard) to Long Bay Road. A new county park is planned at the northeast corner of SR 21 and SR 16, so the goal of this route is to provide potential trail access to that future park. This route also serves the neighborhoods along SR 21 and is the most direct route to Long Bay Road.

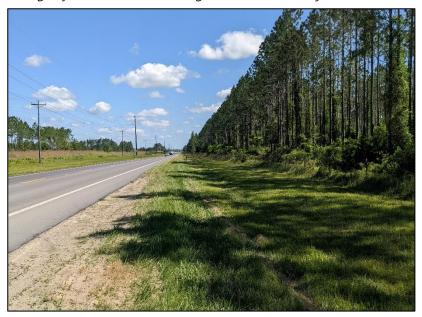
Figure 2-4 Segment 2 Alternative 1







Long Bay Road near Old Jennings Road. Source: Project Team.



SR 21 in Segment 2. Source: Project Team.



Alternative 2: Alternative 2 turns east along SR 16 from SR 21 through Penney Farms then turns north along CR 218 to ultimately connect to SR 21/Long Bay Road to Old Jennings Road. This was the original path conceptualized in the Regional Trails Master Plan in 2019. Although this path is not the most direct route to Long Bay Road, it provides an option to continue the trail along SR 16 providing a future connection to Green Cove Springs. This alternative also provides access to the planned county park as well as the Penney Farms community.









CR 218 just north of SR 16. Source: Project Team.



SR 16 west of CR 218. Source: Project Team.



Segment 3 Alternatives

Segment 3 is the northernmost segment for this project, from Old Jennings Road to Cecil Trail. Several alternatives were developed for Segment 3 based on the geographical challenges in the area.

There are two groups of alternatives. One group of alternatives are unpaved recreational paths through Jennings State Forest and the second group are paved alternatives connecting to the Cecil Trail from Oakleaf Plantation Parkway. Unpaved alternatives limit potential funding opportunities such as SUNTrails. Paving is also a requirement from AASHTO to meet the definition of a shared-use path. Funding opportunities are further detailed in Section 5.3.

- Jennings State Forest Alternatives: The Base Trail Route had the trail travelling west on Old Jennings Road and north along Live Oak Lane through Jennings State Forest (Jennings) and traveling along the Cecil Field Conservation Area to connect to the Cecil Trail. Through collaboration with Florida Forest Service (FFS), it was determined that a paved trail would not be permitted through State Forestry lands. Although, an unpaved connection could be a possibility. Therefore, routes through Jennings are categorized as unpaved recreational paths.
- Oakleaf Plantation Alternatives: To provide a paved trail connection through Segment 3, routes west of Jennings State Forest connecting north via Oakleaf Plantation Parkway (Oakleaf Plantation) were developed. An existing 10-foot sidewalk is present along Oakleaf Plantation Parkway connecting to Duval County that can be utilized as connections between trail segments, included as part of the overall trail network. These alternatives direct the trail connection around Cecil Field and the natural conservation areas.



Jennings State Forest entrance sign. Source: Project Team.



Existing 10-foot sidewalk along Oakleaf Plantation Parkway. Source: Project Team.



Clay-Duval Trail Feasibility Study **Jennings State Forest Alternatives**

Three routing options were developed through Jennings State Forest that would connect to the southern terminus of the Cecil Trail. These three alternatives would be **unpaved recreational paths** through State Forest lands. These alternatives were developed as high-level, conceptual alternatives. Future development and specific alignments would involve direct collaboration with the Florida Forest Service.

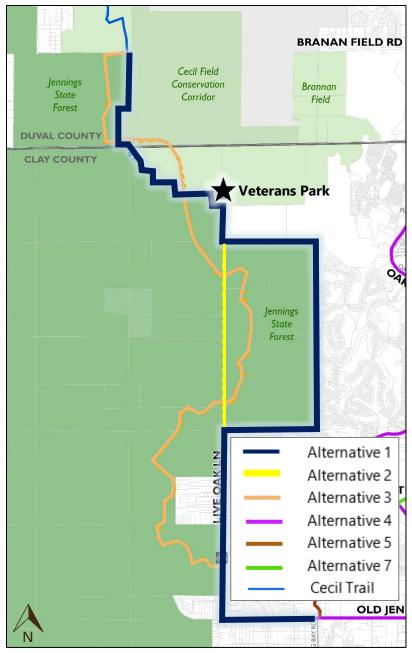
Unpaved Alternative 1 (navy): This alternative travels north along Live Oak Lane and then along the eastern boundary of the forest connecting to the southern terminus of the Cecil Trail. Utilizing the perimeter of the forest would provide the least impact to current forest operations, such as hunting and prescribed burning. Clay County is currently pursuing the potential paving of Live Oak Lane. Therefore, the portion of Live Oak Lane within county right-of-way (not on State Forest lands shown in green) could potentially be a paved trail connection. Additionally, this alternative would provide potential access to Veteran's Park, which is currently an underutilized county park with limited access.



Live Oak Lane in Jennings State Forest. Source: Project Team.



Figure 2-6 Jennings Alternatives (1)





Unpaved Alternative 2 (yellow): This alternative travels north along Live Oak Lane to Veterans Park then west and north along the forest boundary to the southern terminus of the Cecil Trail. This alternative differs from Alternative 1 as it does not utilize the eastern edge of the forest but continues north along Live Oak Lane providing direct access to Veterans Park.



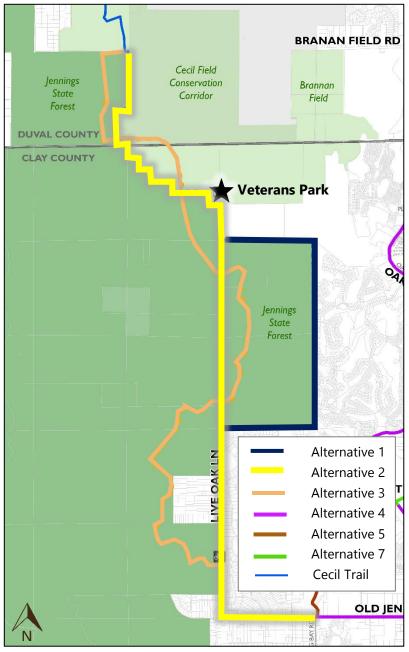
Northern portion of Live Oak Lane towards Veterans Park. Source: Project Team.



Live Oak Lane just north of Old Jennings Road. Source: Project Team.



Figure 2-7 Jennings Alternatives (2)





Unpaved Alternative 3 (orange): This alternative travels north along Live Oak Lane to the Old Jennings Recreation Area parking lot, then meanders through existing recreational paths, fire lanes, and forest service roads connecting to the southern terminus of the Cecil Trail. This alternative was developed by the Clay BB&T group as a way of utilizing the existing systems within Jennings to provide a continuous route within the forest connecting to the Cecil Trail. This route would impact the existing horse trails, hiking trails, and closed service roads that are currently used for internal forest operations, such as logging and wildlife management.



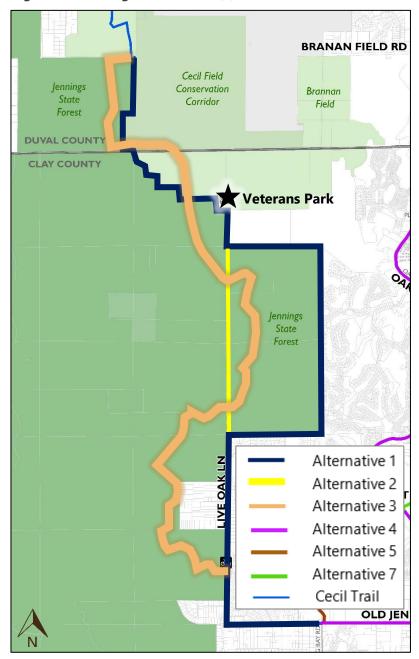
Recreational Path from Old Jennings Recreation Area. Source: Project Team.



Existing service road (closed to public). Source: Project Team.



Figure 2-8 Jennings Alternatives (3)





Clay-Duval Trail Feasibility Study **Unpaved Hybrid Option**

Towards the end of the study, Clay County submitted another potential alternative they would like to consider. This is shown in Figure 2-9.

This alignment appears to utilize Live Oak Lane to Veterans Park (consistent with **Unpaved Option 2**), then uses a combination of the forest perimeter and recreational paths to connect to the existing Cecil Trail (consistent with the northern alignments with **Unpaved Options 1, 2, 3**).



Existing recreational path on Jennings Source: Project Team.

Figure 2-9 Jennings Hybrid Alternative



Source: Clay County staff.





Clay-Duval Trail Feasibility Study Oakleaf Plantation Alternatives

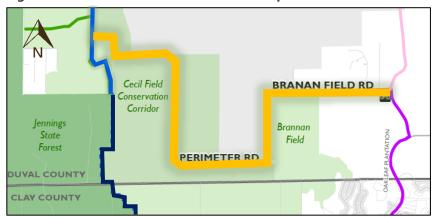
Due to paving limitations through Jennings State Forest, alternatives that would provide a paved connection to the Cecil Trail meeting AASHTO and SUNTrail requirements were pursued. Overall, it was determined that a connection using the existing 10foot sidewalk along Oakleaf Plantation Parkway provides the best option for a paved trail route for Segment 3. A total of four alternatives were developed connecting Old Jennings Road to Oakleaf Plantation Parkway.

Oakleaf Plantation to Cecil Trail Options

Geographical and environmental challenges exist connecting this route west to the Cecil Trail including conservation lands, gopher tortoise habitat, and the Cecil Airport.

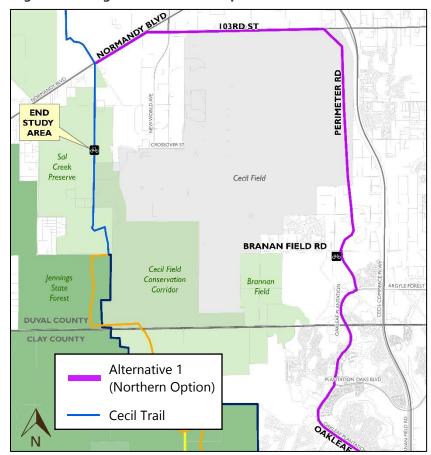
The Base Trail Route conceptualized the option of utilizing Branan Field Road (orange route in Figure 2-11). However, Perimeter Road is an internal road that is inside a fence used by Cecil Airport, which is managed by JAA. After discussions with JAA representatives, it was determined that utilizing this roadway for a trail would not be an option.

Figure 2-11 Branan Field/Perimeter Road Option



Therefore, the remaining paved alternative for this segment was to continue north from Oakleaf Plantation to the eastern Perimeter Road to 103rd Street and Normandy Boulevard to the Cecil Trail (see Figure 2-10). This option was more amenable to JAA as this eastern portion of Cecil Field is identified as an area to be developed for non-aviation related uses, including commercial, office, and residential in the Cecil Airport Non-Aeronautical Master Plan (see Appendix B). All four Oakleaf Plantation alternatives utilize this connection.

Figure 2-10 Segment 3 Northern Option





Alternative 4 (purple): This alternative travels west along Old Jennings Road to Tynes Boulevard, to Royal Pines Drive and Oakleaf Plantation. There is an existing four to six-foot sidewalk along Tynes Boulevard and Royal Pines Drive, with sufficient rightof-way to expand the existing sidewalk to the standard 10 to 12foot multi-use path width. This alternative would also provide direct access to Tynes Elementary School to facilitate students walking or biking to school. Additionally, Tynes Boulevard and Royal Pines Boulevard are tree-lined spine roads providing access to several neighborhoods.



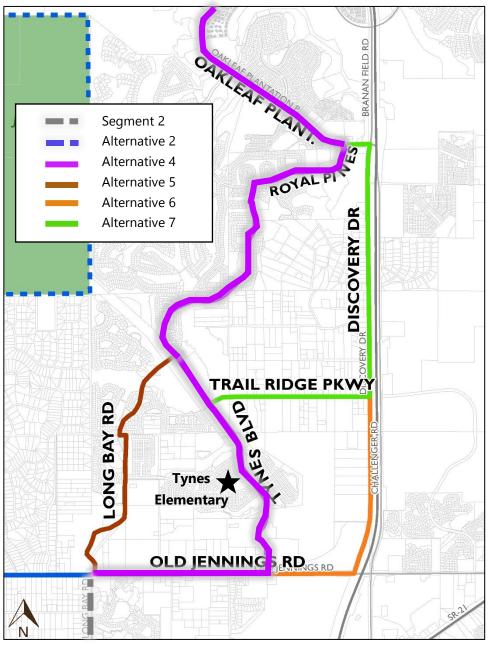
Existing sidewalk along Tynes Boulevard. Source: Project Team.



Existing sidewalk along Royal Pines Drive. Source: Project Team.



Figure 2-12 Segment 3 Alternative 4





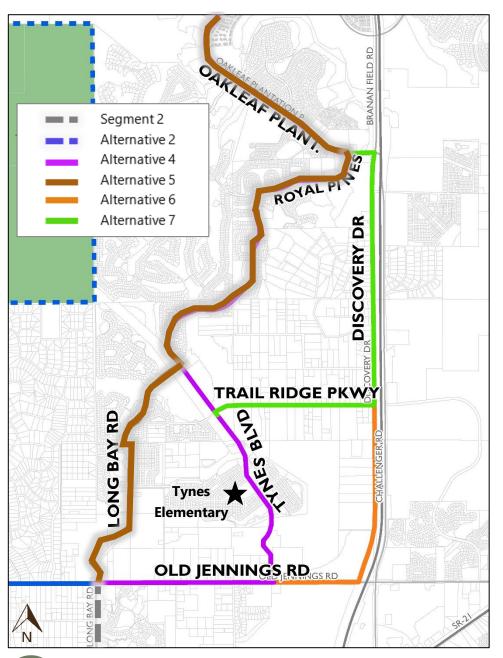
Alternative 5 (brown): This alternative travels north along a potential Long Bay Road extension to Tynes Boulevard and continuing to Royal Pines Drive and Oakleaf Plantation Parkway. Although the extension of Long Bay Road is not currently programmed, Clay County expressed interest in extending Long Bay Road to Tynes Boulevard in the future. The Long Bay Road extension is a platted roadway. If and when this roadway is built, including a multi-use path would provide a trail utilizing Old Jennings Road and the southern portion of Tynes Boulevard.



Existing Long Bay extension right-of-way. Source: Project Team.



Figure 2-13 Segment 3 Alternative 5





Alternative 6 (orange): Alternative 6 travels west along Old Jennings Road to Discovery Drive to Oakleaf Plantation Parkway. This alternative extends the path along Old Jennings Road, which does not currently have existing bicycle or pedestrian facilities. However, there appears to be sufficient right-of-way for a trail. A six-foot sidewalk runs along the entirety of Discovery Drive that could potentially be widened to accommodate a standard 10 to 12-foot multi-use path. However, Discovery Drive is a higher speed roadway adjacent to SR 23 with limited trees with the sidewalk directly adjacent to the roadway, offering limited protection and comfort for users.



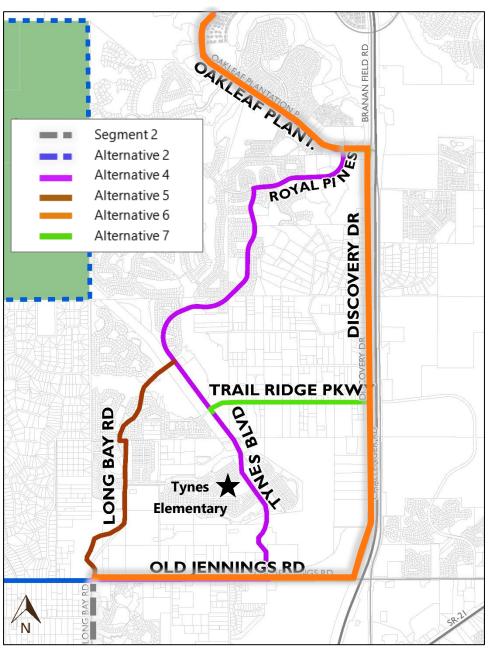
Sidewalk along Discovery Drive. Source: Project Team.



Old Jennings Road west of Discovery Drive. Source: Project Team.



Figure 2-14 Segment 3 Alternative 6





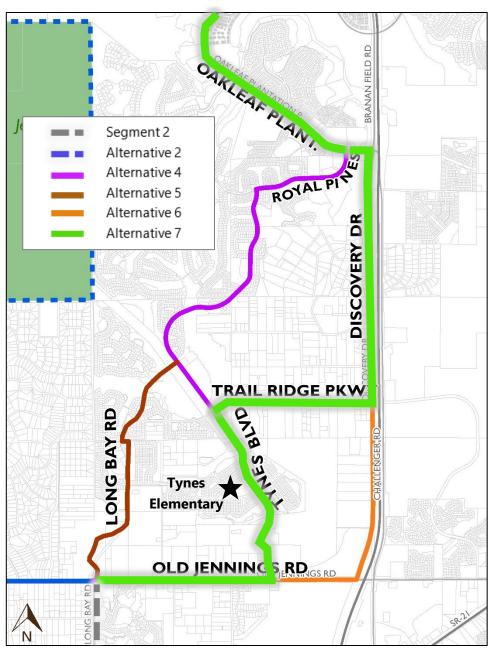
Alternative 7 (green): This alternative utilizes Old Jennings Road to Tynes Boulevard then travels east along Trail Ridge Parkway to Discovery Drive to Oakleaf Plantation. This alternative would widen the existing sidewalks along Tynes Boulevard, Trail Ridge Parkway, and Discovery Drive while also providing access to Tynes Elementary and some neighborhoods along Tynes Boulevard. This is a hybrid option between Alternatives 4 and 6.



Existing sidewalk on Trail Ridge Parkway Source: Project Team.



Figure 2-15 Segment 3 Alternative 7





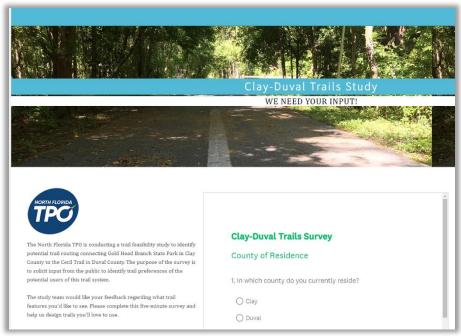




3.0 Public Involvement

The public involvement element of this study featured an online public survey administered via SurveyMonkey and was hosted on its own webpage at www.clayduvaltrailssurvey.com*. The survey was promoted through local Public Involvement Officers (PIOs) for each county, the North Florida TPO newsletter and email blasts, an article published in Clay Today, and targeted Facebook ads.

The survey was live from April 8 to April 20, 2022 with 1,511 participants in the survey. The results are summarized in this section and were utilized in the feasibility analysis portion of this project summarized in Section 4.0. The full survey results are included in **Appendix C**.



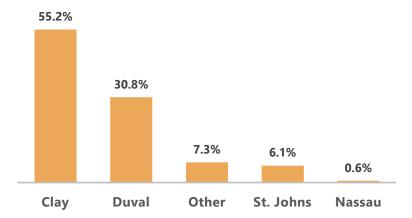
* The webpage link was deactivated at the conclusion of the survey.





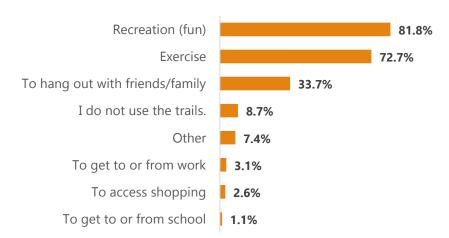
Q1. Participant Location

Over 55% of the survey participants currently live in Clay County. Approximately 31% of the participants live in Duval County.



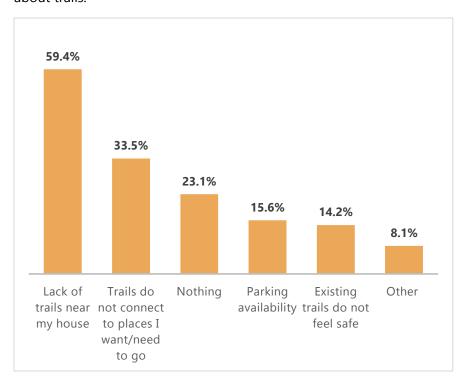
Q2. Current Trail Use

The top three purposes for using the existing trails in Clay and Duval counties were for Recreation (82%), Exercise (73%), and To hang out with friends or family (34%). The least common responses were To get to or from school (1%), To access shopping (3%) or To get to or from work (3%).



Q3. Trail Barriers

The most common responses preventing people from using the trail system in Clay and Duval counties were Lack of trails near my house (60%) and Trails do not connect to places I want/need to go (34%). The least common responses were *Parking Availability* (16%) safety (14%) and Other (8%). Some of the reasons participants listed for Other included ADA access issues and lack of information about trails.

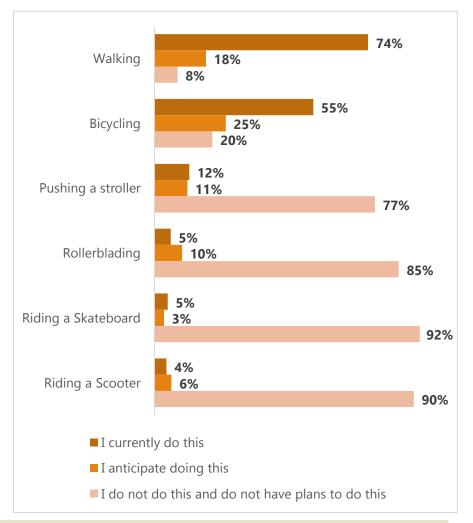


"Trails should be accessible for all types of use. Walking, running, biking, strollers. Make the trails available for all age groups and disabilities." Question 9, Response 717.



Q4. Trail Activities

The two most common activities participants currently do or plan to do on the trails are Walking (74% currently do this, 18% anticipate doing this) and Bicycling (55% currently do this, 25% anticipate doing this). The most common activities that participants currently do not and have no plans to do on the trail are Riding a Skateboard (92%), Riding a Scooter (90%), and Rollerblading (85%).



Q5. Preferred Trail Surface

Approximately 38% of the survey participants indicated that their preferred trail surface was Paved: asphalt or concrete. About 31% preferred a Natural: dirt or sand trail surface. The remaining survey participants either did not have a preference (20%) or preferred an Unpaved: crushed stone of gravel trail surface (11%).







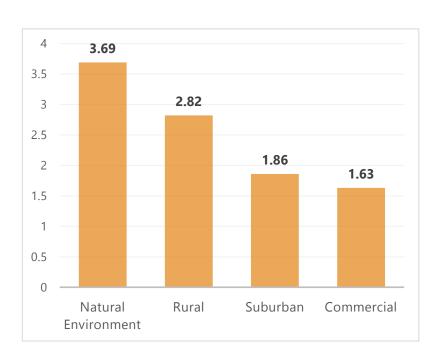






Q6. Preferred Trail Atmosphere

Survey participants were asked to rank their preferred trail atmosphere. The trail atmosphere that scored highest with an average score of 3.69 was the Natural Environment trail, with 82% of the participants ranking this atmosphere as their number one choice. The next highest score was Rural with a score of 1.86. The trail with the lowest score was Commercial with a score of 1.63.









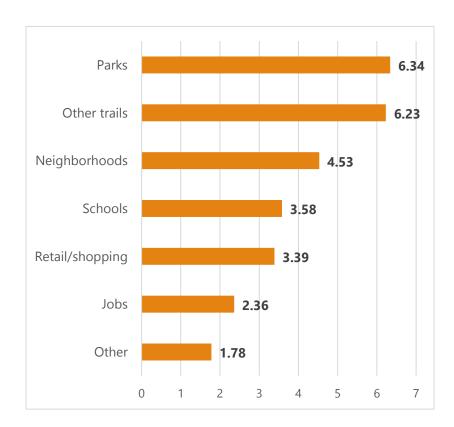


"Nature **but not too far** from civilization." Question 9, Response 707.



Q7. Trail Connections

Survey participants were asked to rank in order of importance the locations they would like the trail system to connect. The top three trail connections were Parks, Other Trails, and Neighborhoods. The bottom two connections were Jobs and Other. Connecting to Schools and Retail/shopping scored in the middle.



"A paved trail that can have multiple access points that connects various areas together and is multi-use." Question 9, Response 688.

Q8. Ideal Trail

The survey participants were asked to describe their ideal trail. The results are summarized in the word cloud below. Popular terms were "shaded", "natural", "safe", "paved" and "parking".

"Shaded and away from multiple uses simultaneously". Question 9,

near ride possible people lights rest areas bathrooms clear along way etc paved trail side go easy access hiking walking biking access Lots shade bicycle small lot restrooms Asphalt shopping path allow dirt gravel long separated traffic accessible One well maintained Shady sand connects need bike features woods prefer Shaded wide enough nature run parking stops paved great trail around safe available natural easy areas well lit road cross Wooded ideal trail walking wooded area wide mountain bike trails Water neighborhoods nice walkers quiet peaceful Wildlife way use along connecting trails distance also Mountain bike surface natural surface trees lots trees Scenic view good different forest connection away traffic Baldwin Trail plenty well horses traveled Without camping places riding

"One that is easy to access either from a parking lot, home, or another trail." Question 9, Response 733.

"Lots of shade and nature to view. Safe and clean. Flood resilience. Accessible to all neighborhoods". Question 9, Response 361.





4.0 Feasibility Analysis

A feasibility analysis was conducted to identify the most viable routes for each segment. The analysis provides a process to weigh the pros and cons of the potential alignments that can be used to inform future trail construction. The feasibility analysis was not to identify a preferred route or routes, but to present the current data available for each route that can inform future decisions as funding and construction opportunities become available.

According to the American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities, the factors to consider when deciding where bicycle improvements are needed to develop a connected bicycle transportation network include:

- User needs
- Traffic volumes, vehicle mix, and speeds
- **Identifying major barriers**
- **Connection to land uses**
- **Logical route**
- Intersections
- **Aesthetics**
- Spacing and density of bikeways
- Safety and security
- **Overall feasibility**

These factors were integrated into the five analysis criteria listed on the right. Details regarding the methodology, data collection, and overall analysis for each segment alternative are included in this section.



Trail Atmosphere

The surrounding area of the trail, encapsulating the trail experience. Criteria included: surface type, trail setting, and signalized intersections.



Trail Buildability

How easily or difficult it would be to build the trail. Criteria included right-of-way (ROW), existing sidewalks and bike lanes, and alternativespecific "other" constructability barriers.



Environmental Impacts

Evaluated the environmental impacts of a trail. Criteria included: wetland impacts, impaired waters, and historic structures.



Connections

Accounted for trail connections and access. Criteria included: population and employment density, parks, neighborhoods, and schools.



Equity

Considered the equity of the trail. Criteria included: population below the poverty line, zero car households, and the minority population.



4.1 Methodology and Data

Methodology

The feasibility analysis consisted of five categories (Trail Buildability, Atmosphere, Trail Environmental Impacts, Connections, and Equity) with three to four criteria in each.

Once the data was gathered for each criterion for each segment alternative, a score was assigned to each. The scores ranged from 0 to 3, with a higher score having a larger benefit. If the data did not clearly fit into a scoring category, a partial score was assigned. The alternatives with higher scores are considered to be more feasible than the alternatives with lower scores. A breakdown of the scoring definitions, data sources, and points categories are provided in **Table 4-1** on the following pages.

The feasibility analysis was performed for Segments 2 and 3 as there was only one alternative developed for Segment 1. The results of the feasibility analysis are summarized in Section 4.2 and 4.3.

Data Sources

Demographic data utilized was from the 2015-2019 American Community Survey (ACS). Environmental data included sources from the Florida Department of Environmental Protection (FDEP), the St. Johns River Water Management District (SJRWMD), and State Historic Preservation Officers (SHPO) database. Roadway data sources were obtained from FDOT. The source utilized for each analysis category is included in **Table 4-1**.

Additionally, some typically utilized data criteria for bicycle and pedestrian feasibility analyses data criteria was not included in the feasibility analysis based on consistency across alternatives for data

available. For example, Essential Fish Habitat (EFH) was not included because there were no EFH identified within any of the alternatives. Annual Average Daily Traffic (AADT) was also not included due to lack of data for all alternatives (e.g. Live Oak Lane). Bus stops and transit access data were also not included because transit was not provided on any of the segments.



Cecil Trail connection. Source: Project Team.



Table 4-1 Feasibility Analysis Scoring Criteria

	Category	Criteria	Score	Description/Justification	Source
	Trail Surface Type	Paved	3	Paved surface type required to be categorized as a multi-use trail and eligible for many trail funding	SUN Trail requirements, multi-use trail definitions,
Trail Atmosphere	Truit Surface Type	Unpaved	1	multi-use trail and eligible for many trail funding sources. Paved was the preferred surface type on the public survey. #1 Preferred trail atmosphere. #2 Preferred trail atmosphere. #3 Preferred trail atmosphere. #4 Preferred trail atmosphere. #5 Desktop/windshir of existing intersections along alternative. #6 Existing ROW. #6 Existing bike lanes along much of the alternative. #6 Desktop/windshir of existing ROW. #6 Desktop/windshir of existing ROW. #6 Desktop/windshir of existing sidewalts through the majority of the alternative. #6 Desktop/windshir of existing sidewalts through the majority of the alternative. #6 Desktop/windshir of existing sidewalts through the majority of the alternative. #6 Desktop/windshir of existing bike lanes along much of the alternative. #6 Desktop/windshir of existing bike lanes along much of the alternative. #6 Desktop/windshir of existing bike lanes along much of the alternative. #6 Desktop/windshir of existing bike lanes along much of the alternative. #6 Desktop/windshir of existing bike lanes along much of the alternative. #6 Desktop/windshir of existing bike lanes along much of the alternative. #6 Desktop/windshir of existing bike lanes along much of the alternative. #6 Desktop/windshir of existing bike lanes along much of the alternative.	public outreach survey.
ds		Natural	3	#1 Preferred trail atmosphere.	
Ē	Trail Setting	Rural	2	#2 Preferred trail atmosphere.	Public outreach survey
Ą	rian Setting	Suburban	1	1 #3 Preferred trail atmosphere. 0 #4 Preferred trail atmosphere. 3 1.5 Number of signalized intersections along alternative. 0 Will there be ROW constraints in building a trail? Desktop/windshield re of existing intersection of existing ROW. Sidewalks exist along 50% or more of the alternative that could either be widened or are wide enough to be considered a trail. Desktop/windshield re of existing ROW. Desktop/windshield re of existing ROW. Desktop/windshield re of existing sidewalks.	
≡.		Other	Paved surface type required to be categorized as a multi-use trail and eligible for many trail funding sources. Paved was the preferred surface type on the public survey. #1 Preferred trail atmosphere. #2 Preferred trail atmosphere. #3 Preferred trail atmosphere. #4 Preferred trail atmosphere. Will there be ROW constraints in building a trail? Sidewalks exist along 50% or more of the alternative that could either be widened or are wide enough to be considered a trail. Sidewalks exist along less than 50% of alternative. No sidewalks through the majority of the alternative. Existing bike lanes along much of the alternative. No bike lanes or paved shoulders present. No other barriers currently identified Major non-defined, alternative-specific barrier to buildability. Comparative existing wetlands or waterbody presence along the alternative. Comparative existing wetlands or waterbody presence along the alternative. Comparative existing wetlands or waterbody presence along the alternative. Comparative existing wetlands or waterbody presence along the alternative. Comparative existing wetlands or waterbody presence along the alternative. Metands or waterbody presence along FLUCCS SJRWMD lance.		
Ë	Signalized	0 to 1	3		Deskton/windshield review
	Intersections	2 to 3	1.5	Number of signalized intersections along alternative.	· ·
	Intersections	4+	Paved surface type required to be categorized as a multi-use trail and eligible for many trail funding sources. Paved was the preferred surface type on the public survey. 3 #1 Preferred trail atmosphere. 2 #2 Preferred trail atmosphere. 1 #3 Preferred trail atmosphere. 0 #4 Preferred trail atmosphere. 3 Number of signalized intersections along alternative. 0 Will there be ROW constraints in building a trail? 3 Sidewalks exist along 50% or more of the alternative that could either be widened or are wide enough to be considered a trail. 1.5 Sidewalks exist along less than 50% of alternative. 3 Existing bike lanes along much of the alternative. 0 No sidewalks through the majority of the alternative. 1.5 Paved shoulder present along much of the alternative. 0 No bike lanes or paved shoulders present. 1.5 Minimal or potential non-defined, alternative-specific barrier to buildability. Comparative existing wetlands or waterbody presence along the alternative ealong the alternative. Comparative existing wetlands or waterbody presence along the alternative ealong the alternative. Comparative existing wetlands or waterbody presence along the alternative ealong the alternative. Comparative existing wetlands or waterbody presence along the alternative ealong the alternative. Comparative existing wetlands or waterbody presence along the alternative ealong the alternative. Comparative existing wetlands or waterbody presence along the alternative. Comparative existing wetlands or waterbody presence along the alternative.	or existing intersections	
	ROW Constraints	No	3	Will there he ROW constraints in building a trail?	Desktop/windshield review
	NOW Constraints	Yes	0	will there be ROW constraints in building a trail? of existing ROW.	
	Many Sidewalks 3	that could either be widened or are wide enough to	Desktop/windshield review		
Trail Buildability	Sidewalks	Some Existing Sidewalks	1.5	that could either be widened or are wide enough to be considered a trail. Sidewalks exist along less than 50% of alternative. Desktop/windshield of existing sidewalks	
<u> </u>	Sidewalks No Sidewalk O No sidewalk		No sidewalks through the majority of the alternative.		
Bu			Desktop/windshield review		
=	Bike Lanes	Paved Shoulder	1.5	Paved surface type required to be categorized as a multi-use trail and eligible for many trail funding sources. Paved was the preferred surface type on the public survey. 3 #1 Preferred trail atmosphere. 2 #2 Preferred trail atmosphere. 1 #3 Preferred trail atmosphere. 2 #4 Preferred trail atmosphere. 3 Number of signalized intersections along alternative. 0 #4 Preferred trail atmosphere. 3 Will there be ROW constraints in building a trail? 5 Sidewalks exist along 50% or more of the alternative that could either be widened or are wide enough to be considered a trail. 1.5 Sidewalks exist along less than 50% of alternative. 3 Existing bike lanes along much of the alternative. 4 No sidewalks through the majority of the alternative. 5 Paved shoulder present along much of the alternative. 6 No bike lanes or paved shoulders present. 7 No other barriers currently identified and shoulders. 8 No other barriers currently identified and shoulders. 9 Major non-defined, alternative-specific barrier to buildability. 9 Comparative existing wetlands or waterbody presence along the alternative. 1.5 Comparative existing wetlands or waterbody presence along the alternative. 1.5 Comparative existing wetlands or waterbody presence along the alternative.	
Ĕ		None			
		No	3		Alternative-specific
	Other Barriers	Minimal	1.5	Paved surface type required to be categorized as a multi-use trail and eligible for many trail funding sources. Paved was the preferred surface type on the public survey. #1 Preferred trail atmosphere. #2 #2 Preferred trail atmosphere. #3 Preferred trail atmosphere. #4 Preferred trail atmosphere. Number of signalized intersections along alternative. Will there be ROW constraints in building a trail? Sidewalks exist along 50% or more of the alternative that could either be widened or are wide enough to be considered a trail. Sidewalks exist along less than 50% of alternative. No sidewalks through the majority of the alternative. No bike lanes along much of the alternative. No bike lanes or paved shoulders present. No other barriers currently identified No other barriers currently identified Minimal or potential non-defined, alternative-specific barrier to buildability. Comparative existing wetlands or waterbody presence along the alternative. Comparative existing wetlands or waterbody presence along the alternative. Comparative existing wetlands or waterbody presence along the alternative. Comparative existing wetlands or waterbody presence along the alternative. SUN Trail requireme multi-use trail defini public outreach surve multi-use trail defini public outreach surve results. Public outreach surversults. Desktop/windshield of existing intersection afternative. Desktop/windshield of existing sidewalks. Desktop/windshield of existing sidewalks. Alternative-specific Alternative-specific barrier to buildability. Alternative-specific Alternative-specific definical as either 50 defined as either 50 de	Alternative-specific
		Major	0		Alternative-specific
Env. Impacts		Low	3		Wetlands or waterbodies defined as either 5000 or
	Wetland Impacts	Medium	1.5	Comparative existing wetlands or waterbody presence along the alternative 6000 F	6000 FLUCCS code from the SJRWMD land cover
		High	0		





	Category	Criteria	Score	Description/Justification	Source	
		No Impaired Waters	3	Alternative goes directly through an Impaired Water body.	Impaired waters shapefile,	
Env. Impacts	Impaired Waters	Minimal Impact	1.5	Alternative goes along edge of Impaired Water body.	FDEP.	
		Major Impact	0	No Impaired Waters near alternative.		
ıv. In	Historic	None	3	Number of historic structures or resource groups	SHPO structures and	
ū	Structures	1 to 4	1.5	within 500' of alternative. resource gro	resource group shapefiles.	
		5+	0			
	Population/	1.25+	3	Population/Employment density per acre. High		
	Employment	0.5-1.24	1.5	population/employment density means the trail will	2015-2019 ACS	
	Density	0.0-0.5	0	provide access to people and jobs.		
SI		2 or more	3	Direct connection to existing or planned park Direct connection to existing or planned park	Desktop review of existing	
io	Parks	One	1.5		project advisory team about	
Connections		None	0			
Ē		Many	3		Desktop/windshield review	
ပိ	NI stadala sala sala	Few	1.5	Commention of a mainth and a sale	of alternative routing	
	Neighborhoods	None	0			
	Schools	One+	3	Number of schools adjacent to the alternative	Schools shapefile from	
	Schools	None	0	Direct connection to existing or planned park Direct connection to existing or planned park Desktop/windshield of alternative routing through existing neighborhoods. Number of schools adjacent to the alternative. Percent of the population below the poverty line. Darks and feedback project advisory teat planned parks. Desktop/windshield of alternative routing through existing neighborhoods. Schools shapefile for FDOT.		
		10.1%+	3			
	Poverty	5.1%-10%	1.5	Number of schools adjacent to the alternative. through existing neighborhoods. Schools shapefile from FDOT.	2015-2019 ACS	
		0-5%	0			
t	Zero Car	5.1%+	3			
Equity	Households	2.6%-5%	1.5	Percent of the occupied households with 0 cars.	2015-2019 ACS	
ш	ilouseiloius	0-2.5%	0			
	Minority	50%+	3	Percent of the population listing their racial status as		
	Population	25.1%-50%	1.5	1.5 other than white alone and/or ethnicity as hispanic or	2015-2019 ACS	
	1 opulation	0%-25%	0	latino for adjacent census tracts.		



4.2 Segment 2 Analysis Results

The Segment 2 alternatives were scored based on their limits between SR 21/SR 16 and Long Bay Road (outlined in red Figure 4-1). Both alternatives scored similarly, with Alternative 1 receiving a total overall score of 24.5 and Alternative 2 receiving a total score of 23.

in Figure 4-1, scored higher in Trail Atmosphere due to signalized fewer intersections and Buildability due to the existing sidewalks, and lower in Equity.

Conversely Segment shown in orange in Figure 4-1, scored higher in Equity due to the amount of zero car households and lower in Atmosphere and Buildability.

Both segments scored the

same in Environmental Impacts and Connections. Alternative 1 has fewer historic structures, but Alternative 2 has more wetland impacts. Additionally, Segment 1 has higher population and employment density and connects to more neighborhoods, but

Alternative 2 provides access to Shadowlawn Elementary School.

The scoring for Segment 2 is summarized in **Table 4-2**.

Alternative 1, shown in blue Figure 4-1 Segment 2 Evaluation Area

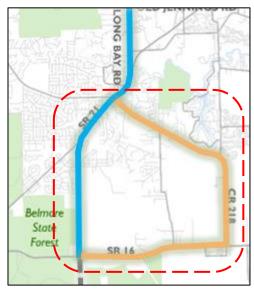


Table 4-2 Segment 2 Scoring Results

	Category	Alternative 1: SR 21/Blanding Blvd	Alternative 2: SR 16/CR 218
ere	Trail Surface Type	3	3
Atmosphere	Trail Setting	2	2
E O	Signalized Intersections	3	1.5
At	Category Total	8	6.5
	ROW Constraints	3	3
ii t	Sidewalks	1.5	0
dab	Bike Lanes	0	0
Buildability	Other Barriers	0	0
	Category Total	4.5	3
in	Wetland Impacts	0	1.5
me	Impaired Waters	0	0
io	Historic Structures	1.5	0
Environment	Category Total	1.5	1.5
S	Population/Employment	3	1.5
ion	Neighborhoods	1.5	0
ect	Parks	1.5	1.5
Connections	Schools	0	3
O	Category Total	6	6
	Poverty	3	3
Equity	Zero Car Households	1.5	3
Equ	Minority Population	0	0
	Category Total	4.5	6
	Overall Total	24.5	23



4.3 Segment 3 Analysis Results

The Segment 3 analysis results were scored based on the entire limits of Segment 3 from Old Jennings Road to the Cecil Trail Connection. The overall scores ranged from 15 as the lowest to 43.5 as the highest. The alternatives utilizing Oakleaf Plantation Parkway (Alternatives 4 through 7) scored significantly higher than the alternatives through Jennings State Forest. The scores for Alternatives 4 through 7 ranged from 33 to 43.5 whereas the scores for Alternatives 1 through 3 ranged from 15 to 19.5. The Oakleaf Alternatives scored higher in the Buildability, Environmental Impacts, Connections, and Equity categories whereas the Jennings Alternatives trended higher in the Trail Atmosphere category. The results of the analysis are summarized in this section and displayed in **Table 4-3**. The scores for each category are displayed at the end of this section in **Table 4-4.**

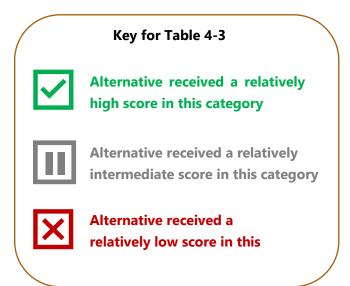


Table 4-3 Segment 3 Analysis Summary

Alternative	1	2	3	4	5	6	7
Atmosphere	✓	✓	✓	✓	✓	×	Ш
Buildability	Ш	Ш	×	✓	<u>~</u>	✓	Ш
Environment	×	Ш	×	✓	✓	✓	✓
Connections	Ш	Ш	×	✓	<u>~</u>	Ш	Ш
Equity	×	×	×	✓	✓	✓	✓





Comparing the Jennings Alternatives

To review, the three Jennings Alternatives are: Alternative 1 (Forest Perimeter), Alternative 2 (Live Oak Lane extension), and Alternative 3 (Internal Route). Alternative 2 scored the highest with an overall score of 22, and Alternative 3 scored the lowest with an overall score of 16.

Due to consistency in the variables, the alternatives scored equally in the Trail Atmosphere, Connections, and Equity categories.

The alternatives scored differently in the following categories:

- Buildability: Alternatives 1 and were considered to be low in ROW constraints. However, Alternative 3 utilizes some existing closed roads used for internal operations for FFS that they expressed safety and accessibility concerns with opening to the public. Therefore, that ROW may not be available, and contributes to a lower Other Barrier score for **Alternative 3**.
- **Environmental Impacts:** The most wetland impacts werealong Alternative 1, with many of the contiguous wetlands concentrated along the edge of the forest. Maps showing the wetland impacts are available in **Appendix D**. However, Alternative 3 had the most impaired water impacts, with the proposed route going directly through an identified impaired water system.



Jennings State Forest entrance sign. Source: Project Team.





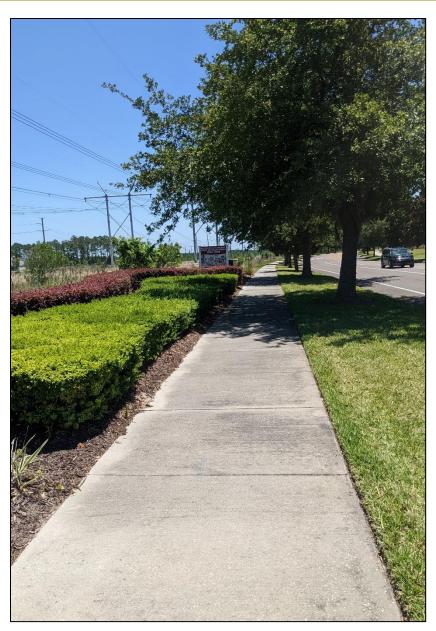
Comparing the Oakleaf Alternatives

The four Oakleaf Alternatives are **Alternative 4** (Tynes Boulevard), Alternative 5 (Long Bay Extension), Alternative 6 (Discovery South), and Alternative 7 (Discovery North). Alternative 4 scored the highest with an overall score of 43.5, and Alternative 7 scored the lowest with an overall score of 33.

Due to consistency in the variables, the alternatives scored equally in the **Equity** category.

The alternatives scored differently in the following categories:

- ♦ Atmosphere: Alternatives 4 and 5 scored highest in this category with the combination of Rural and Neighborhood trail settings. Alternative 6 scored the lowest in this category due to the proximity of Discovery Drive to SR 23 and the number of signalized intersections.
- Buildability: Alternatives 4 and 6 scored highest in this category, getting top scores in each subcategory, largely due to the existing infrastructure along Tynes Road and Discovery Drive. Alternative 7 scored the lowest due to ROW constraints and incomplete sidewalks and bike lanes along Trail Ridge Parkway
- **Environmental Impacts**: All four alternatives scored an overall 7.5 in this category, but for different reasons. For example, Alternative 5 had the most wetland impacts but did not impact any historic structures.
- **Connections: Alternative 5** scored highest in this category due to neighborhood access and access to Tynes Elementary School. Alternatives 6 and 7 scored lowest due to lack of neighborhoods along Discovery Drive.



Sidewalk on Tynes Boulevard. Source: Project Team.



Jennings Alternatives vs. Oakleaf Alternatives

The Oakleaf Alternatives scored higher in the following categories:

- **Buildability:** The existing infrastructure along several of the roadways in these alternatives influenced the higher scores. For example, Oakleaf Plantation Parkway and Discovery Drive both having existing wide sidewalks some of which were wide enough to already be considered a multi-use trail. Other existing sidewalks could be expanded to accommodate trail usage.
- **Environmental Impacts:** The Oakleaf Alternatives had fewer wetland and impaired water impacts than the Jennings Alternatives. The alternatives scored similarly in historic structures.
- **Connections**: The Oakleaf Alternatives provide connections to more population and employment, neighborhoods, and schools.
- **Equity:** The Oakleaf Alternatives serve more households below the poverty line, zero car households, and the minority population.

The alternatives scored similarly in the Trail Atmosphere category. Even though the Jennings alternatives have the preferred Natural trail setting as indicated in the public survey and fewer signalized intersections. The Oakleaf Alternatives have the preferred Paved surface type and some had the second highest preferred Rural trail setting.

The potential issue of safety and security with the Jennings alternatives should also be noted. The AASHTO guide specifies that security issues can play a factor for sections of paths that are not visible from roads and neighboring buildings. The

Jennings alternatives are all in remote locations that may not be easily accessed. This may create personal security issues, prevent users who need help from being seen, prevent path users from leaving the path in an emergency, and could impede emergency response.



Existing path in Jennings State Forest. Source: Project Team.



Table 4-4 Segment 3 Scoring Results

		Jen	nings Alternati	ves	Oakleaf Alternatives			
	Category	Alternative 1: Forest Perimeter	Alternative 2: Live Oak Lane	Alternative 3: Internal Route	Alternative 4: Tynes Blvd	Alternative 5: Long Bay Ext.	Alternative 6: Discovery South	Alternative 7: Discovery North
e.e	Trail Surface Type	1	1	1	3	3	3	3
phe	Trail Setting	3	3	3	1.5	1.5	0.5	0.5
JOS	Signalized Intersections	3	3	3	1.5	1.5	0	1.5
Atmosphere	Category Total	7	7	7	6	6	3.5	5
>	ROW Constraints	3	3	1.5	3	3	3	0
Buildability	Sidewalks	0	0	0	3	1.5	3	1.5
dab	Bike Lanes	0	0	0	3	3	3	2.5
Ę	Other Barriers	1.5	1.5	0	3	1.5	3	3
	Category Total	4.5	4.5	1.5	12	9	12	7
ent	Wetland Impacts	0	1.5	1.5	3	1.5	3	3
Ĕ	Impaired Waters	1.5	1.5	0	3	3	3	3
<u>i</u>	Historic Structures	1.5	1.5	1.5	1.5	3	1.5	1.5
Environment	Category Total	3	4.5	3	7.5	7.5	7.5	7.5
S	Population/Employment	1.5	1.5	1.5	3	3	3	3
Connections	Neighborhoods	0	0	0	3	3	1.5	1.5
ect	Parks	3	3	1.5	1.5	1.5	1.5	1.5
n C	Schools	0	0	0	3	0	0	0
ŏ	Category Total	4.5	4.5	3	10.5	7.5	6	6
	Poverty	0	0	0	3	3	3	3
Equity	Zero Car Households	0	0	0	1.5	1.5	1.5	1.5
Equ	Minority Population	1.5	1.5	1.5	3	3	3	3
	Category Total	1.5	1.5	1.5	7.5	7.5	7.5	7.5
	Overall Total	20.5	22	16	43.5	37.5	36.5	33







5.0 Conclusion

This study identified feasible routes connecting a trail from Gold Head Sate Park in Clay County to the Cecil Trail in Duval County. Based on coordination with local agencies, an overview of existing and previous routes, and a public involvement element, a series of alternatives were developed. The route alternatives were then analyzed for their feasibility based on a variety of attributes that resulted in a matrix summarizing the pros and cons for each route.

The highest scoring routes are presented in **Section 5.1**. However, the trail network that is ultimately implemented may include one alternative or multiple alternatives based on various factors utilized in the feasibility analysis and details that arise during engineering and implementation stages of the trail design. For example, an unpaved connection can continue to be pursued through Jennings State Forest as well as a paved connection connecting to Oakleaf Parkway as these provide trail connections serving different experiences, users, and connections.

The overall goal is to enhance the regional trail network between Clay and Duval counties. The trail network conceptualized in the Regional Trails Master Plan ultimately envisioned a loop around the Cecil Airfield that provides a natural trail experience in addition to connecting to neighborhoods and population.



Exit sign at Gold Head Branch State Park. Source: Project



5.1 Recommended Routes

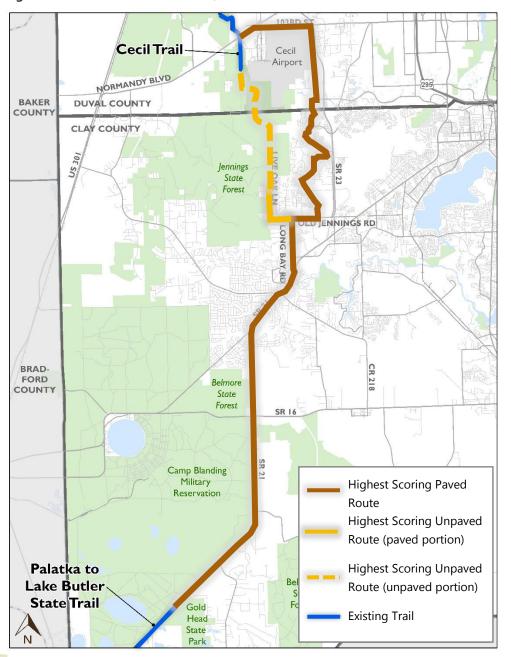
The overall highest scoring routes are displayed in Figure 5-1. More specific maps by segment are provided in the following pages, and a preliminary costing is provided in **Table 5-1**. The routes displayed include the highest scoring paved connection and the highest scoring unpaved connection. The total mileage for the paved route is approximately 36.5 miles.

As previously mentioned, a loop trail around Cecil Airport was the original conception in the Regional Trails Master Plan to serve the Duval-Clay County trail connection. During the study, it was determined that a paved connection through Jennings State Forest was not a possibility, as Florida Forest Service would not permit a paved trail through Jennings State Forest. However, an unpaved connection can still be pursued.

The southern limits of the trail would be at the current terminus of the Palatka-to-Lake Butler State Trail at Gold Head State Park. The trail would then travel along SR 21/Blanding Boulevard to Long Bay Road. The paved connection to the Cecil Trail would then continue east along Old Jennings Road, then north along Tynes Boulevard to Royal Pines Drive and Oakleaf Plantation Parkway. Through Duval County, the trail would continue north along Cecil Connector Road/Perimeter Road (east), then west along 103rd Street to Normandy Boulevard and the Cecil Trail.

Additionally, the unpaved connection would travel west along Old Jennings Road, north along Live Oak Lane to Veterans Park, and would generally weave along the forest perimeter and/or utilize existing trails to Sal Taylor Creek Preserve/Cecil Trail terminus. The portion along Old Jennings Road and Live Oak Lane along Clay County right-of-way may be paved.

Figure 5-1 Recommended Routes, Overall





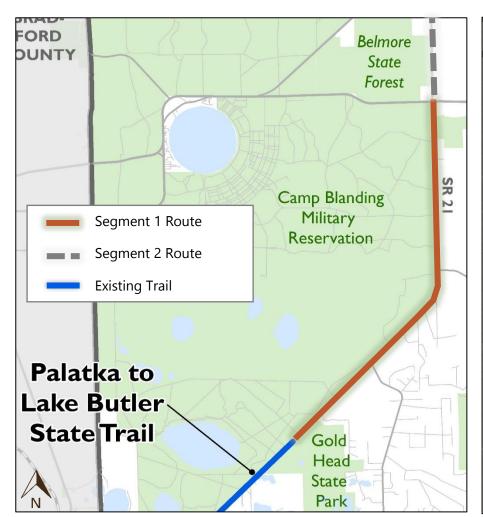
Segment 1 Route

As there was only one logical alternative for Segment 1, the route continues along SR 21 to SR 16 from the terminus at the Palatkato-Lake Butler State Trail. The existing trail travels along the east side of the road. Therefore, the trail should continue along the east

Figure 5-2 Segment 1 Recommended Route

side of the road, opposite from Camp Blanding.

This route is approximately **10.7 miles** long from Gold Head State Park to SR 16. Sufficient right-of-way is present along the length of the roadway to accommodate a standard 12-foot multi-use path.







Segment 2 Route

Both routes scored similarly for Segment 2. However, Alternative 1 scored slightly higher and provides a more direct route to Long Bay than Alternative 2 (CR 21). Both SR 21/Blanding Boulevard and CR 218 have similar rural atmospheres that transition to suburbanrural near Middleburg. Additionally, SR 21/Blanding Boulevard provides access to more residential than CR 218. The total length of the segment is approximately 10.1 miles. There are some existing sidewalks along SR 21/Blanding Boulevard near Middleburg and along parts of Long Bay Road that could

Figure 5-3 Segment 2 Recommended Route



potentially be widened to accommodate a 10 to 12-foot multi-use path. A new multi-use path would need to be constructed along the segments without existing facilities.



Existing sidewalk on Long Bay Road. Source: Project Team.





Clay-Duval Trail Feasibility Study Segment 3 Paved Route

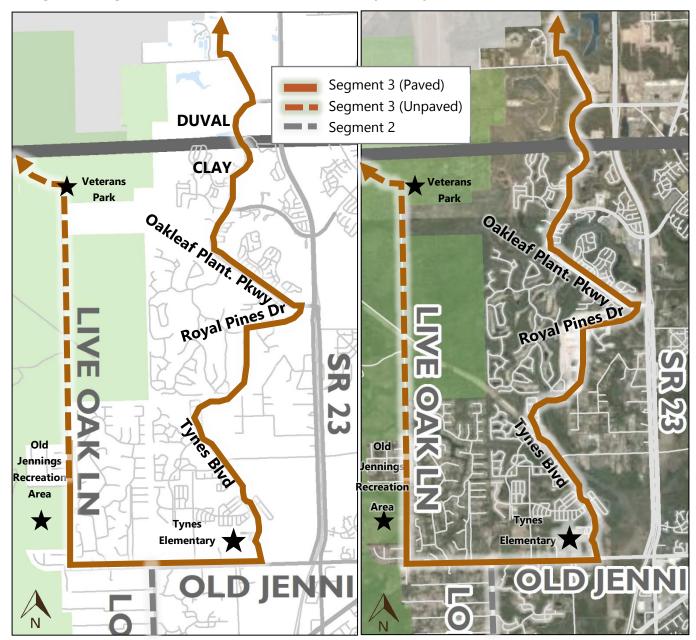
The recommended paved route for Segment 3 is Alternative 4, which was the highest scoring overall route. The total length of the recommended paved route for Segment 3 is approximately 17.3 miles (including 4.1 miles of existing trail along Oakleaf Pine Parkway).

This route optimizes on the existing trailhead at the Old Jennings Recreation Area. This trailhead features a parking area, restrooms, access to Jennings State Forest trails, and picnic tables.

From the trailhead, the trail continues south down Live Oak Lane to Old Jennings Road, then utilizes Tynes Boulevard and Royal Pines Drive to connect to the existing 10-foot sidewalk along Oakleaf Plantation Parkway. There are existing sidewalks along Tynes Boulevard and Royal Pines Drive that have the potential to be widened to a 10 to 12-foot multi-use path. A new multi-use path would need to be constructed along the portion of Old Jennings Road between Long Bay Road and Tynes Boulevard.



Figure 5-4 Segment 3 Recommended Paved Route (Clay County)





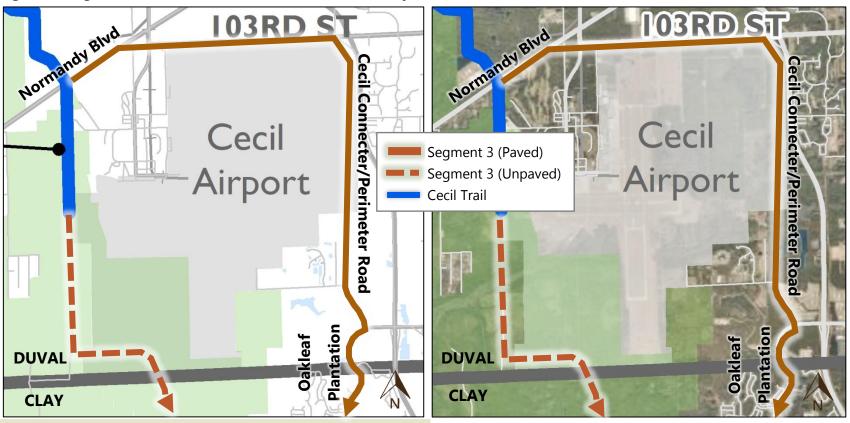


Much of this route is adjacent to tree-lined, low speed roadways that should provide a comfortable environment for trail users. Additionally, this route provides access to Tynes Elementary and several neighborhoods. Once in Duval County, the trail would continue along Oakleaf Plantation Parkway north to Cecil Connecter Road/Perimeter Road, then east along 103rd Street and west along Normandy Boulevard to connect to the Cecil Trail.

The eastern portion of the Cecil Airfield is planned for commercial, office, and residential development. As this area moves forward with development, a shared multi-use path can potentially be

Figure 5-5 Segment 3 Recommended Paved Route (Duval County)

included in the development plans. Furthermore, no existing sidewalks or bike lanes are along 103rd Street, but there appears to be sufficient right-of-way to accommodate a 10 to 12-foot shared use path. Normandy Boulevard currently has bike lanes but does not have sidewalks. An addition of a shared-use path would provide pedestrian facilities to this roadway and contribute to the overall bicycle and pedestrian network aligned with the goals for the City of Jacksonville. There is also currently a painted trail crossing for Normandy Boulevard connecting the Cecil Trail and the Taye Brown Regional Park/Jacksonville Equestrian Center and Cecil Complex.





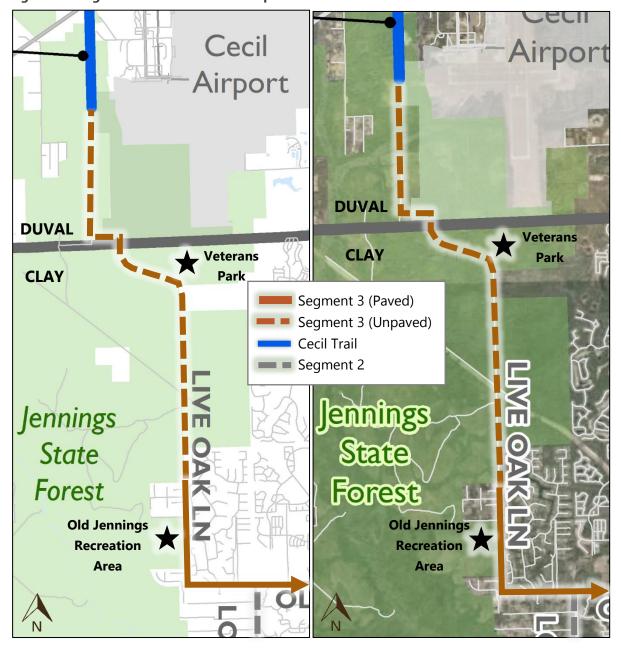
Seament 3 Unpaved Route

The recommended unpaved route for Segment 3 is consistent with the hybrid route submitted by Clay County at the end of the study. The highest scoring unpaved alternative was Alternative 2 utilizing Live Oak Lane to Veterans Park. The modified hybrid version adjusted the connection from Veterans Park to the Cecil Trail by combining the forest perimeter and Alternative 3 internal forest routes. The unpaved route is approximately 6.6 miles long.

All routes through Jennings State Forest face similar challenges. There are wetlands, environmentally sensitive areas, safety and security concerns, and access concerns when it comes to utilizing internal service roads and existing trails. Whichever route through the forest the county decides to pursue would require authorization and direct collaboration with the Florida Forest Service.

Additionally, the paving of Live Oak Lane along the county-maintained portion of the roadway is currently being pursued by the county. This would provide a potential bicycle and pedestrian access to the parking area, trails, and facilities at the Old Jennings Recreation Area, which could potentially function as a trailhead for the Clay-Duval Trail. Furthermore, continuing the trail connection north along Live Oak Lane as an unpaved trail would provide access to Veterans Park and ultimately an unpaved trail connection to the Cecil Trail. It would also contribute and provide additional access to the existing and programmed mountain bike trails, hiking trails, and horse trails within Jennings State Forest.

Figure 5-6 Segment 3 Recommended Unpaved Route





5.2 Planning-Level Costs

Generalized planning cost estimates are provided below. These estimates demonstrate a rough magnitude cost of trail improvements for future trail planning efforts.

Segment 1

Improvement	Cost	Est. Miles	Total Est. Cost
12' paved multi-use trail	\$345,000/mile	10.7 miles	\$3.7 million

Segment 2

Improvement	Cost	Est. Miles	Total Est. Cost	
12' paved multi-use trail	\$345,000/mile	7.2 miles	\$2.5 million	
5' sidewalk expansion \$180,000/mile		2.9 miles	\$522,000	
Overall Seg	ment Total	10.1 miles	\$3 million	

Segment 3

Improvement Cost		Est. Miles	Total Est. Cost	
12' paved multi- use trail	\$345,000/mile	8.4 miles	\$2.9 million	
5' sidewalk expansion	\$180,000/mile 4.8 miles		\$864,000	
Unpaved recreational path	\$153,000/mile	6.6 miles	\$1 million	
Overall Segm	ent Total	19.8 miles	\$4.8 million	

The total estimated cost for the trail system is \$11.5 million. Estimates are shown in 2021 dollars.

All Segments

Segment	Estimated Cost	
Segment 1	\$3.7 million	
Segment 2	\$3 million	
Segment 3	\$4.8 million	
Total Estimated Cost	\$11.5 million	

Cost estimate sources are listed below and provided in **Appendix E**.

FDOT cost per mile models (October 2021):

- Two Directional, 12' Shared Use Path: O01
- Sidewalk Construction, 5' one side: O03

Pedestrian and Bicycle Infrastructure Costs in the US (2013):

• Multi-use trail, unpaved, average cost. Adjusted by 3% inflation per year for 2021 dollars.



5.3 Funding Opportunities

Various local, state, federal, and private funding opportunities are available to build trails. Potential funding opportunities are listed below.

Grant Opportunities

The Clay-Duval Trail system may be eligible for the following grant programs listed below and further detailed in this section.

- **Community Change Grants (America Walks)**
- Land and Recreation Grants (FDEP)
- **Shared-Use Nonmotorized (SUN) Trail Program***
- **Transportation Set-Aside Program (TAP)**

Community Change Grants

Summary: Grants are awarded to innovative programs that encourage walkability and active lifestyle for community members.

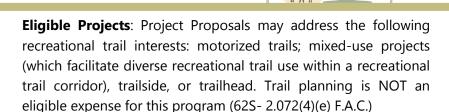
Eligible Proposals: Projects that encourage walkability and active lifestyle.

Maximum Grant Amount: Not specified; determined by funds available each year.

Link: https://americawalks.org/programs/community-changegrants-2021/

Florida Recreational Trails Program

Summary: Federally funded by the United States Department of Transportation's Federal Highway Administration (FHWA). Provides matching-grant funds to renovate, develop or maintain recreational motorized, nonmotorized, and mixed-use trails and trailside facilities.



Project Proposals may address the following recreational trail needs: Construction of new recreational trails (with restrictions for new trails on federal lands); maintenance and restoration or renovation of existing recreational trails; development and rehabilitation of trailside and trailhead facilities; and recreational trail linkages.

Maximum grant amount: \$500,000 for non-motorized diverse use.

Link: https://floridadep.gov/lands/land-and-recreationgrants/content/florida-recreational-trails-program-rtp

Land and Recreation Grants

Summary: Provides grants to acquire or develop land for public outdoor recreation. Administered through FDEP's Land and Water Conservation Fund (LWCF). Eligible participants include all county governments, municipalities in Florida and other legally constituted local governmental entities with the responsibility for providing outdoor recreational sites and facilities for the general public.

Eligible Projects: Trails and trailheads, including the costs of planning and site preparation are noted as eligible primary recreation facilities and projects.

Maximum Grant Amount: \$1 million. An applicant's requested grant funds may be revised by the department due to the availability



^{*} Only paved, multi-use paths eligible for this program



of program funds. Grant rewards are contingent upon appropriation by the federal government.

Link: https://floridadep.gov/lands/land-and-recreationgrants/content/lwcf-assistance

Shared-Use Nonmotorized (SUN) Trail Program

Summary: The SUN Trail program provides funding to develop a statewide system of paved multi-use trails (SUN Trail network) for bicyclists and pedestrians separated from traffic.

Eligible Projects: Project needs to be a paved, multi-use trail to be eligible for funding identified in the SUN Trail network. FDOT defines a multi-use trail as a paved, shared-use path, which is typically 12 feet wide, but may vary from 10 feet to 14 feet or larger, depending on physical or environmental constraints or usage. Ineligible projects include sidewalks, nature trails, loop trails wholly within a park or natural area, and on-road facilities such as bike lanes.

Maximum grant amount: Determined based on the project.

Link: https://www.fdot.gov/planning/systems/SUNTrail.shtm

Transportation Alternatives Set-Aside Program (TAP)

Summary: Used to fund small-scale transportation projects ranging from pedestrian and bicycle facilities to recreational trails. Locally, this program is administered through the North Florida TPO. Functions as a cost reimbursement program.

Eligible Projects: Construction, planning, and design of on and off-road facilities for bicyclists, pedestrians, and other forms of non-motorized transportation (pedestrian and bicycle facilities) are included as eligible projects.

Maximum Grant Amount: Determined by North Florida TPO.

Link: https://www.fdot.gov/planning/systems/tap/default.shtm

Local-Level Funding Opportunities

Local-level funding opportunities include contributions from local businesses, non-profit organizations, and the local government.

- Businesses: Contributions from local foundations can provide grants and volunteers. Local small businesses and partnerships can provide co-branding, events, and sponsorships.
- Non-Profit Organizations: Community foundations and non-profit collaborators can provide additional trailbuilding branding, trail-building monetary, and opportunities.
- Local Government: Local governments can provide funding mechanisms such as bonds and levies through ballot initiatives, granting programs, or special tax districts and fees (such as a mobility fee). The option to contribute to a trail system can also be provided to developers as new development comes in. Building a multi-use path can also be offered as an alternative to sidewalks and/or bike lanes for new development as applicable.





5.4 Next Steps

Moving forward, the local agencies can continue their coordination in implementing a trail system connecting Clay and Duval counties as funding and construction opportunities become available.

Furthermore, based on the results of the study, mainly that the connection from Jennings State Forest to Sal Taylor Creek Preserve is proposed to be unpaved, the City of Jacksonville indicated that the preferred future trail route would likely use the former bridge crossing at the terminus of Sal Taylor Creek's trail system instead of the extended southern Cecil Trail terminus shown in the report

(see map in Appendix F). Additionally, for a paved route east and north of the airport, the City of Jacksonville would be interested in pursuing routing south along POW-MIA Memorial Parkway then following Newman Street west to connect to the existing, paved Cecil Trail instead of or addition to following Normandy Boulevard (see map in **Appendix F**). This would provide links to Cecil Gym, the future POW-MIA museum site, and the golf course complex.

Overall, adding to the trail system in Clay and Duval counties increases the mobility and transportation opportunities within the region as well as provides additional recreational opportunities.



